

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

K00002146 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

K00002146001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

02/05/2009 10:00

County:

Jonathan Burr **ROANE - 73**

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

Field Determinations

pH:

7.68

pH Units

Chlorine, residual:

Conductivity:

64

uMHO

3.27 Temperature:

Dissolved Oxygen: 14.21

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total METHOD: EPA 310.2								
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:							
Total Alkalinity	11	mg/L	3.8	10	S Burchfield	2/9/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	21	mg/L	0.7	1	P Leathers	2/6/2009	

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	ALYTE RESULT UNITS MDL					DATE
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009

TEST: Residue, Suspended METHOD: SM 2540D							
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
U	mg/L	10	10	A Peeples	2/6/2009		
		RESULT UNITS	RESULT UNITS MDL	RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit**

K00002146002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

2

Station No.:

EMORY002.1RO

Date/Time Collected:

02/05/2009 10:00

Sampler's Name:

Larry Everett

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

Field Determinations

pH:

7.19

pH Units

Chlorine, residual:

Conductivity:

59

uMHO

Temperature: Dissolved Oxygen: 14.41

2.25

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	14	mg/L	3.8	10	S Burchfield	2/9/2009

TEST: Hardness, Calcium	um METHOD: SM 3500-Ca D						
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE	
Calcium hardness	23	mg/L	0.7	1	P Leathers	2/6/2009	

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL ANALYZED BY	ANALYZED BY:	DATE
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009

TEST: Residue, Suspended METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	2/6/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002146003

Project Name:

TVA-Ash Spill

Sample Description:

i va-asii opiii

Sampler Project Name: TVA Ash Spill

Emory River mile 1.7

Project Site No.:

3

Station No.:

EMORY001.7RO

Date/Time Collected:

02/05/2009 10:20

Sampler's Name: County:

Larry Everett

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:
Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009 12:50

Received By:

E McCrary

Field Determinations

pH:

7.33

pH Units

Chlorine, residual:

Conductivity:

107

uMHO

Temperature:

3.61

Dissolved Oxygen: 13.34

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	37	mg/L	3.8	10	S Burchfield	2/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	40	mg/L	0.7	1	P Leathers	2/6/2009

TEST: Residue, Settleable METHOD: SM 2540F							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009	

TEST: Residue, Suspended	ME.	THOD: SM 254					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	2/6/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002146004

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

4

Station No.:

EMORY000.1RO

Date/Time Collected:

02/05/2009 10:40

Sampler's Name: County:

Larry Everett

Sample Matrix:

ROANE - 73

EFO:

Water

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To:

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

Field Determinations

:Hq

7.37

pH Units

Chlorine, residual:

Conductivity:

116

uMHO

Temperature:

3.09 **Dissolved Oxygen: 13.50**

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	64	mg/L	3.8	10	S Burchfield	2/9/2009

TEST: Hardness, Calcium	WE,					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	60	mg/L	0.7	1	P Leathers	2/6/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009

ME					
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
24	mg/L	10	10	A Peeples	2/6/2009
	RESULT	RESULT UNITS		RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002146005

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

5

Station No.:

CLINC002.3RO

Date/Time Collected:

02/05/2009 10:55

Sampler's Name:

Larry Everett

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

Field Determinations

pH:

7.58

pH Units

Chlorine, residual:

Conductivity: Temperature:

236 6.44

uMHO

Dissolved Oxygen: 12.46

Other:

Flow:

CFS

mg/L

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	100	mg/L	3.8	10	S Burchfield	2/9/2009	

TEST: Hardness, Calcium	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	84	mg/L	0.7	1	P Leathers	2/6/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL ANALYZED BY	ANALYZED BY:	DATE
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009

TEST: Residue, Suspended	WE					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	2/6/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Sample Description:

K00002146006

Project Name:

TVA-Ash Spill

pH: Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.20

Conductivity:

Temperature:

Other:

Flow:

7.69

255

6.24

pH Units

uMHO

mg/L

CFS

Sampler Project Name: TVA Ash Spill **Project Site No.:**

6

Station No.:

CLINC004.5RO

Date/Time Collected:

02/05/2009 11:10

Sampler's Name:

Larry Everett

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	S Burchfield	2/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	94	mg/L	0.7	1	P Leathers	2/6/2009

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT UNITS		MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	<0.1	ml/L	0.10	0.10	P Leathers	2/6/2009

TEST: Residue, Suspended	ME.	THOD: SM 254	0D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	2/6/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

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TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

K00002146

Knoxville Regional Laboratory

Lab ID:

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Michael Atchley TDEC-WPC Knoxville FO

3711 Middlebrook Pike

Nashville, TN 37243-1534

Knoxville, TN 37921

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Arialytical Supervisor

Lab-Sample Number: K00002146001 **Project Name:** TVA-Ash Spill

Sample Description: Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY012.1RO Date/Time Collected: 02/05/2009 10:00

Sampler's Name: Jonathan Burr County: ROANE - 73 Sample Matrix: Water

Sample Matrix: Water
EFO: Knoxville
Sampling Agency: TDEC-WPC
Billing Code: 327.34-20
Send Report To: TDEC-WPC
Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By: E McCrary

Field Determinations
pH: 7.68 pH Units
Chlorine, residual:
Conductivity: 64 uMHO

Temperature: 3.27

Dissolved Oxygen: 14.21 mg/L

Other:

Flow: CFS

TEST: Digestion Metals	METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Digestion Metals	02/06/2009		·		A Wilson	2/6/2009		

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	90	μg/L	2.9	10	A Bass	2/18/2009	

TEST: ICP-MS	ME ⁻	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	UNITS MDL	MQL	ANALYZED BY:	DATE
Aluminum	43	μg/L	6.4	10	M Pattanayek	2/11/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	20	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	0.24J	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	0.39J	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	0.33J	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	24	μg/L	0.42	1	M Pattanayek	2/11/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	Ü	μg/L	1.3	5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	4.5J	μg/L	1.9	5	M Pattanayek	2/11/2009

K00002146001 TVA-Ash Spill

Project Name: Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Emory River mile 12

Project Site No.:

1

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

02/05/2009 10:00

County:
Sample Matrix:

Jonathan Burr ROANE - 73

EFO: Sampling Agency: Water Knoxville

Billing Code: 3:
Send Report To: T
Agency Invoiced: T

TDEC-WPC 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By:

E McCrary

Field Determinations
pH: 7.68

Chlorine, residual:

Conductivity: 64 uMHO

pH Units

Temperature: 3.27

Dissolved Oxygen: 14.21 mg/L

Other:

Flow: CFS

TEST: Mercury METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

Lab-Sample Number: K00002146002
Project Name: TVA-Ash Spill
Sample Description: Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.: 2

Station No.: EMORY002.1RO Date/Time Collected: 02/05/2009 10:00

Sampler's Name: Larry Everett County: ROANE - 73 Sample Matrix: Water EFO: Knoxville Sampling Agency: TDEC-WPC **Billing Code:** 327.34-20 Send Report To: TDEC-WPC Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By: E McCrary

Field Determinations
pH: 7.19 pH Units
Chlorine, residual:
Conductivity: 59 uMHO

Temperature: 2.25 Dissolved Oxygen: 14.41

Other:

Flow: CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Digestion Metals	02/06/2009				A Wilson	2/6/2009		

TEST: ICP	EST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	270	μg/L	2.9	10	A Bass	2/18/2009	

TEST: ICP-MS	ME'	ΓHOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	180	µg/L	6.4	10	M Pattanayek	2/11/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	1.4J	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	26	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	0.32J	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	2.0	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	0.58J	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	39	μg/L	0.42	1	M Pattanayek	2/11/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	4.0J	μg/L	1.9	5	M Pattanayek	2/11/2009

K00002146002

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 2.1

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

02/05/2009 10:00 Larry Everett

County:

ROANE - 73

Sample Matrix: EFO: Sampling Agency: Water Knoxville

Billing Code: Send Report To: Agency Invoiced: TDEC-WPC 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009 12:50

Received By:

TEST: Mercury

E McCrary

	METHOD:	EPA	245.1	

Field Determinations

Dissolved Oxygen: 14.41

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.19

59

2.25

pH Units

uMHO

mg/L

CFS

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

Lab-Sample Number: K00002146003 **Project Name:** TVA-Ash Spill

Sample Description: Emory River mile 1.7 **Sampler Project Name:** TVA Ash Spill

Project Site No.:

Station No.: EMORY001.7RO Date/Time Collected: 02/05/2009 10:20

Sampler's Name: Larry Everett County: ROANE - 73

Sample Matrix:WaterEFO:KnoxvilleSampling Agency:TDEC-WPCBilling Code:327.34-20Send Report To:TDEC-WPCAgency Invoiced:TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By: E McCrary

Field Determinations
pH: 7.33 pH Units
Chlorine, residual:
Conductivity: 107 uMHO
Temperature: 3.61

Dissolved Oxygen: 13.34 mg/L

Other: CFS

TEST: Digestion Metals	METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Digestion Metals	02/06/2009				A Wilson	2/6/2009		

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	7100	μg/L	2.9	10	A Bass	2/18/2009	

TEST: ICP-MS	ME	THOD: EPA 20	8.0			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	5800	μg/L	320.0	500	M Pattanayek	2/11/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	17	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	200	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	1.2	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	6.6	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	6.4	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	16	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	11	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	330	μg/L	0.84	2	M Pattanayek	2/11/2009
Nickel	10	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	· U	μg/L	1.3	5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	0.57J	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	25	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	23	μg/L	1.9	5	M Pattanayek	2/11/2009

K00002146003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

Date/Time Collected:

EMORY001.7RO 02/05/2009 10:20

Sampler's Name:

Larry Everett

County: Sample Matrix: ROANE - 73

EFO: Sampling Agency:

Water Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

02/05/2009 12:50

Received By:

E McCrary

Field Determinations

pH:

7.33

pH Units

Chlorine, residual:

Conductivity:

107

uMHO

Temperature: Dissolved Oxygen: 13.34

3.61

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002146004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

02/05/2009 10:40

County:

Larry Everett

Sample Matrix: EFO:

ROANE - 73 Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009 12:50

Received By:

E McCrary

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	02/06/2009				A Wilson	2/6/2009

Field Determinations

Dissolved Oxygen: 13.50

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other: Flow:

7.37

116

3.09

pH Units

uMHO

mg/L

CFS

TEST: ICP	ICP METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DA					DATE	
lron	4700	μg/L	2.9	10	A Bass	2/18/2009	

TEST: ICP-MS	MET	ΓHOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	3900	μg/L	256.0	400	M Pattanayek	2/11/2009
Antimony	υ	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	10	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	140	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	0.73J	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	4.4J	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	4.1	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	11	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	6.6	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	320	μg/L	0.84	2	M Pattanayek	2/11/2009
Nickel	7.3	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	0.31J	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	16	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	16	μg/L	1.9	5	M Pattanayek	2/11/2009

Lab-Sample Number: K00002146004 **Project Name:** TVA-Ash Spill

Sample Description: Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.: 4

Station No.: EMORY000.1RO Date/Time Collected: 02/05/2009 10:40

Sampler's Name:
County:
ROANE - 73
Sample Matrix:
Water
EFO:
Knoxville
Sampling Agency:
TDEC-WPC
Billing Code:
Send Report To:
TDEC-WPC

Priority Date:

Agency Invoiced:

Date/Time Received: 02/05/2009 12:50

TDEC-WPC

Received By: E McCrary

Field Determinations

pH: 7.37 pH Units

Chlorine, residual:

Conductivity: 116 uMHO

Temperature: 3.09

Dissolved Oxygen: 13.50 mg/L

Other:

Flow: CFS

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

Lab-Sample Number: K00002146005 Project Name: TVA-Ash Spill

Sample Description: Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.: 5

Station No.: CLINC002.3RO Date/Time Collected: 02/05/2009 10:55

Sampler's Name: Larry Everett County: ROANE - 73 Sample Matrix: Water Knoxville EFO: TDEC-WPC Sampling Agency: **Billing Code:** 327.34-20 Send Report To: TDEC-WPC Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By: E McCrary

Field Determinations

pH: 7.58 pH Units

Chlorine, residual:

Conductivity: 236 uMHO

Temperature: 6.44

Dissolved Oxygen: 12.46 mg/L

Other:

Flow: CFS

TEST: Digestion Metals METHOD: EPA 200.2							
ANALYTE	RESULT	RESULT UNITS MDL			ANALYZED BY:	DATE	
Digestion Metals	02/06/2009				A Wilson	2/6/2009	

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DAT					
Iron	280	μg/L	2.9	10	A Bass	2/18/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	2/11/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	1.2J	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	32	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	0.20J	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	1.6	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	0.58J	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	31	μg/L	0.42	1	M Pattanayek	2/11/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	0.04J	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	2.8J	μg/L	1.9	5	M Pattanayek	2/11/2009

Lab-Sample Number: K00002146005 **Project Name:** TVA-Ash Spill

Sample Description: Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

CLINC002.3RO

Station No.: Date/Time Collected: 02/05/2009 10:55

Sampler's Name: Larry Everett County: ROANE - 73 Sample Matrix: Water EFO: Knoxville Sampling Agency: TDEC-WPC **Billing Code:** 327.34-20 Send Report To: TDEC-WPC Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received: 02/05/2009 12:50

Received By: E McCrary

Field Determinations 7.58 pH Units :Hq Chlorine, residual: 236 Conductivity: uMHQ Temperature: 6.44 Dissolved Oxygen: 12.46 mg/L

Other:

CFS Flow:

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002146006

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

02/05/2009 11:10

Sampler's Name:

Larry Everett

County:

ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009 12:50

Received By:

E McCrary

Field	Determinations
pH:	7.69

Conductivity: 255

Temperature: 6.24

Dissolved Oxygen: 12.20 mg/L

pH Units

uMHO

Other:

Flow: CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	02/06/2009				A Wilson	2/6/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	220	μg/L	2.9	10	A Bass	2/18/2009

TEST: ICP-MS	METHOD: EPA 200.8					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	83	μg/L	6.4	10	M Pattanayek	2/11/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	2/11/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	2/11/2009
Barium	31	μg/L	2.5	5	M Pattanayek	2/11/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	2/11/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	2/11/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	2/11/2009
Cobalt	0.17J	μg/L	0.04	1	M Pattanayek	2/11/2009
Copper	1.2	μg/L	0.38	1	M Pattanayek	2/11/2009
Lead	0.28J	μg/L	0.10	1	M Pattanayek	2/11/2009
Manganese	29	μg/L	0.42	1	M Pattanayek	2/11/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	2/11/2009
Selenium	U	μg/L	1.3	- 5	M Pattanayek	2/11/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	2/11/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	2/11/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	2/11/2009
Zinc	2.7J	μg/L	1.9	5	M Pattanayek	2/11/2009

K00002146006

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.20

Conductivity:

Temperature:

7.69

255

6.24

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

02/05/2009 11:10

Sampler's Name:

Larry Everett

County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

02/05/2009

12:50

Received By:

E McCrary

TEST: Mercury						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	2/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected